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ABSTRACT

This study was designed to determine selected psycho-social parameters associated with a group of teenage, female long distance runners. These young women, who train by running approximately 50-90 miles per week, had scores in certain physiological and anthropometric measurements which were among the most advantageous for running ever recorded in a group of females. Each subject was administered the California Psychological Inventory (CPI), the Nowicki-Strickland Locus of Control test, and an open-ended questionnaire. Through comparisons with earlier norms for young women of this age group, it was found that the subjects scored higher than normal in academic achievement as a result of a more independent sense of self. In all other factors of the CPI the subjects were found to have normal scores. These results were in accord with the findings from the Locus of Control scores which showed that the subjects scored high in internality (i.e., these athletes are self-directed rather than other-directed). They seem to be motivated by the joy of running, the feeling of independence associated with running, and the close interpersonal relationship between team members. The data suggest that they are high in achievement motivation. (Author)

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PSYCHO-SOCIAL PARAMETERS IN YOUNG FEMALE LONG DISTANCE RUNNERS

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PSYCHO-SOCIAL PARAMETERS IN YOUNG FEMALE LONG DISTANCE RUNNERS

In recent years there has been a dramatic upsurge in female participation in areas of endeavor, previously considered as bastions of male superiority. Broom and Selznick (5) have noted that in western society, masculine and feminine roles are associated with sharp differences in temperament. The female is seen as naturally non-aggressive and passive. Ulrich (30) has noted that the female plight is augmented in America by the tradition that it is "American" to be aggressive and competent. Mead (23) however has pointed out that sex roles are primarily cultural and not universal.

Bardwick (4) has commented on the characteristics of dependence found in the American female:

> An independent sense of self with a resulting sense of self esteem can only evolve when the individual, alone, sets out to attain goals and with reasonable frequency, achieve them. For many reasons.....the American girl rarely achieves an independent sense of self and self esteem.

Bardwick (4) has inferred that in some respects the male sexual identity and sense of self is easier to achieve due to the cultural ambivalence surrounding appropriate female behaviors. Perhaps, in no area of endeavor is this ambivalence more prevalent than in the area of sport.

Historically, women were excluded from sport because of the alliance between sports and war (12). Gradually, in this century they have become more active in sport to the point where females are now seen in nearly all areas of sport but not without cultural ambivalence. Metheny (24) has noted that in our culture, socially acceptable areas of sport involvement for the female is associated with those activities involving projection of the body through space in aesthetically pleasing patterns, using force through a light implement or overcoming the resistance of a light object with skill manipulation. Traditionally, sports involving

body contact, application of force to a heavy object or projection of the body through space over long distances have been considered socially unacceptable.

A relatively small number of females have dared to enter these "socially unacceptable" areas of sport. Since they are so few in number their accomplishments are notable. A 17 year old woman presently holds the English Channel record by 26 minutes, while a 33 year old woman was the winner of the 1973 100-mile AAU open supermarathon run. In 1967, the first female ran in the Boston Marathon against the wishes of several meet officials. In 1975, 40 women started and all but a few finished. We know little of these champions and less of those young female athletes who may be the champions of tomorrow. Garai and Scheinfeld (11) have noted the general lack of research into the psychology of the female athlete. The purpose of the present study was to determine selected psycho-social factors associated with a group of teenage female long distance runners.

Method

The subjects in the present study were limited to 13 postpubescent females, ages, 13-18 yrs. ($\bar{X}$ - 15.77; SD - 1.74). All were members of the Syracuse Chargers Track Club under the sponsorship of the city of Syracuse and Syracuse University. The 2 1/2 year old program is coached by the head track coach from the University and is open to all citizens of the greater Syracuse area (population, 350,000).

Anthropometric and psysiological measures have been reported in another paper (6). To summarize, these females have a bone structure ideally suited for long distance running; they are low in percent body fat; and extremely high in $\dot{V}O_2$ max which is possibly the most important limiting factor for success in middle and long distance running. Thr group includes 5 members of the 1974 U.S. National Cross Country Championship team, the current American record holder in the 15-mile run and a

medal winner in the mile at the 1975 AAU National Junior Olympics.

All psychological data were collected over a 3-month period from May to July of 1975. The subjects met for three one-hour testing sessions. The initial session was used to administer the California Psychological Inventory (CPI). The second session was used to administer the Nowicki-Strickland test for locus of control (26). The last session was used to administer an open-ended questionnaire consisting of 16 questions designed to assess motives, attitudes and beliefs of the group.

Results and Discussion

Questionnaire

Each of the questions will be listed followed by a discussion of the findings:

What do you like best about running?

The most common response to this question dealt with the feeling of individual freedom associated with running e.g. "I guess the thing I like the most is that it's something individual--it's my body and it's all mine alone, my running efforts and rewards are things I've achieved by myself (coaching excluded). There is so much satisfaction in running and running well - it builds your confidence and makes you a better person." A corollary theme expressed was "feeling good" such as: "I feel good when I run" or "I like the feeling of being in good shape." These responses agree well with the observation of Harris (14) who reported that female athletes "feel better, without exception" as a result of sport participation. This sense of feeling better may be a function of both psysiological and psychological interaction. The anthropometric and physiological characteristics of these subjects are ideally suited for running. There is abundant research (1) to indicate the VO_2 max and body type are powerfully influenced by heredity. Thus, these individuals possessed the potential to become outstanding runners. Maslow's (22) theory of self actualization - to become all that one is capable of becoming is self fulfillment - may, in part, explain the sense of "feeling good" due to running.

List the factors which influenced your decision to join the Chargers.
To continue running for the Chargers.

When asked why they joined the Chargers, the reasons most commonly expressed were: (1) the coaching, (2) the opportunity for competition, and (3) socialization responses. Due to the lack of opportunity for coaching and competition, it is not surprising that the opportunity to run for a university level coach and compete with similar athletes around the country were motivating factors.

In response to the second question, only 2 subjects failed to include some remark which indicated the close friendships among team members. Typical remarks were: "Closeness of team members (like a family)" or "kids are great." These responses are consistent with earlier reports which have indicated that socialization is a major factor in athletic involvement for females (20,28). Other common responses were: (1) travel opportunities* and (2) the coaching. Four subjects expressed the opinion that they "have to run." One stated simply, "It's something to do instead of sitting around." This comment was expressed more frequently in a group of national class age group swimmers (7).

Make a list of the most important things in your life.

Only one subject failed to include track as one of the most important things in her life, while only two failed to include school or a similar response involving preparation for later life. Maccoby (19) has pointed out that in high school there is a tendency for females to withdraw from competitive, aggressive behavior which may be interpreted as unfeminine. Cratty (8) has noted that most girls drop athletic endeavors in early adolescence around age 15 or 16. It may be inferred that these subjects were independent and have "seen through" such cultural road blocks.

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*Certain members of the team were soon to travel to San Francisco to defend their National Cross Country Championship.

In a few words, how do you feel after winning a race? After you lose a race?

Uniformly, the responses to these questions reflected the importance of achievement in running. Most subjects gave responses to the first question which included the positive connotations associated with winning. Typical of the responses were: "I feel happy, proud, like I've accomplished something," or I feel satisfied, confident, positive," or "there's a happy feeling inside me." Approximately 40 percent, however, responded by indicating the importance of comparison with their own "best" time. Similarly, in response to the question concerning losing, over 60 percent indicated that the "time" is the basis of satisfaction. This finding may be partially due to the lack of ambiguity in standards of track performance. In addition however, it may be noted that Malumphy (21) has found that women were reported to lose and win well. They are concerned with level of competition and how well they play the game. Nevertheless, the remainder of the subjects responded with comments such as: "When I run bad I feel disgusted or "frustrated, disappointed lack confidence."

Have you ever participated in team sports? In a sport requiring extensive training?

All but one of the subjects had participated in team sports prior to involvement in running. These sports included: basketball, volleyball, touch football, field hockey, gymnastics and swimming. Four subjects had previously trained for swimming, while one had trained for gymnastics. All are now participating exclusively in running. Is it not possible that there are numerous young females who now participate in more traditional sports who would become runners if the opportunity was available?

Make a list of your heroes.

Three subjects said that they had no heroes. All others listed female athletes

with the exception of one individual who included in her list the late Steve Prefontaine, the long distance runner, recently killed in a car accident. Of interest, was the finding that almost half of the respondents listed a college-aged, highly successful fellow club member as their hero.

> Of the individuals you associate with most often, approximately what percentage share your interest in running? What percentage participates regularly in a sport other than track? What percentage do not participate in sport?

The subjects reported that approximately 75 percent ($\bar{X}$ = 74.8) of the people with whom they most often associate are fellow track athletes (over half of the subjects reported 90 percent or greater, while one subject reported only 25 percent). Approximately fifteen percent ($\bar{X}$ - 15.2) of their friends participated in sports, other than track, while only 10 percent participate in no sport. These findings indicate a possible method for reducing the cultural ambivalence associated with the female who participates in long distance running. These results agree with the observations of Sherif (29) who noted that the best way to predict sports involvement is to observe who the girl regularly associates with in and out of school. Kandel and Lesser (16) found that a reference group of peers comes to be the most potent source of influence on adolescents decisions.

Sibling Order

No pattern could be discerned concerning sibling order. First borns and second borns were approximately equally represented, with one subject the third in a family of 3 and another subject the fourth in a family of 4. Four subjects had older brothers with only 2 of these older brothers participating in sport. Portz (27) reviewed the recent literature and concluded that sibling status is not the primary determinant of personality. Neither Landers (17) nor Gerber et al (12) could find a sibling hypothesis for sport participation and interest.

Did either or both of your parents play a role in your decision to be a runner?

Only 2 subjects (sisters) reported the influence of a parent, their father. All others stated that the family had no role in their decision. One subject reported parental concern with consequent pressure to drop her running. This finding is in sharp contrast with reports of a group of national class female age group swimmers (7). These differences may be due to the greater social acceptability of swimming for the female, at present. With the greater publicity given, there is possibly greater vicarious involvement by the parent.

What are the most important factors to be a successful runner?

The runners seemed to feel that there are 3 primary factors which contribute to running success. They were: (1) determination and dedication, (2) training, and (3) being competitive.

What factors affect your goals for future performance?

The factors involved in future performance were (1) their future attitude toward running (2) the college which they attend and the (3) possibility of injury.

Test Data

Locus of control or what some authorities refer to as internal versus external orientation (I-E) may be defined as the control which individuals perceive they have in shaping their own destiny. "Internals" believe that they are in charge of variables which affect their lives while "externals" perceive their world as controlled by forces outside themselves (26). Although numerous research studies have been conducted to determine the orientations of indiviudals from various cultural, ethnic and situational environments, there is a dearth of research dealing with locus of control in athletes (9,15,18) in general and female athletes in particular.

I-E scores were: $\bar{X}$ = 9.25, SD = 5.55. When compared with norms for females of similar age and grade in school, the subjects in the present study are shown to be significantly ($p<.025$) high in internality. Intuitively, this would seem to make sense. It would seem appropriate that an individual who runs 6-8 miles daily in snow, rain and heat, gradually seeing her reference performance (run time) improve, would believe that she has some degree of control over her world. An intriguing question left unanswered concerns the degree to which these runners were internal prior to formal training and the effect of training in altering one's view of the world.

The only scale of the CPI found to be significantly different ($p<.01$) from high school aged female norms was achievement by way of independence (Ai). Gough (13) has described individuals high in this trait as being "independent and self reliant; and as having superior intellectual ability and judgment." Furthermore, Minton (25) has found a significant relationship between internal control and need for achievement. That these individuals would be high in independence could have been predicted by the comments of Bardwick (4):

> It seems to me that independence is achieved when the child is able to see himself as generally successful in achieving goals.....what matters is not so much the content of the goal as the nature of the resolution.
>
> Independence in achievement behaviors results from learning that one can accomplish by oneself, can rely upon one's abilities, can trust one's own judgment and can become invested in a task for its own sake.

Although no formal test was made for the presence of achievement motivation (N_{ach}), the evidence for the presence of such a construct in these individuals is overwhelming. Atkinson (2) has defined N_{ach} as a motive to be competent in a situation in which there are standards of excellence. Such an individual takes pride in his work when he is held responsible for his actions. The person with a

high achievement motive has developed internal standards of excellence, is independent, persistent, undertakes realistic tasks, performs well academically, and has clearly understood goals. The subjects in the present study train long hours daily with the goal of achieving success in running (Table 1) and do well in school (Table 2). Nearly all place track and school in a list of their most important things in life. Feather (10) has stated that those with high N_{ach} usually direct and take responsibility for outcomes while those with low N_{ach} tend to regard outcomes as beyond their control. That these subjects were independent and high in internality seems to fully support this contention.

Commenting on the lack of research in N_{ach} with females, Bardwick (4) maintains that in women, N_{ach} is inextricably linked with another need - that of affiliation. The runners in this study tend to support this hypothesis. As a motive for continuing to train, they tend to include the close personal friendships with team members.

Summary

This study has described a young female who trains daily and achieves some measure of success in track and in school work. She has hereditarily based characteristics which make success in running possible. She enjoys running and has apparently "seen through" the myth that females are supposed to act in certain culturally prescribed ways. She begins to train partly because of the joy of running, the coaching and competitive opportunities and continues to run for the same reasons with the addition of the close personal friendships with team members. Although independent she associates primarily with other athletes. She believes that she has the ability to control her world. She is probably high in achievement motivation striving to be competent in situations where standards of excellence exist.

TABLE 1. Means, Standard Deviations and Range for Training and Performance Data.

	$\bar{X}$	SD	Range
Age when subject recalls discovering that "running is enjoyable"	12.70	2.91	8-17
Age when formal training began	14.10	1.79	11-17
Months of Continuous formal Training to date*	26.40	5.06	18-36
Typical Training Days per week	7.0	-	7.0
Miles Run in a "Typical Week"	57.83	14.02	42-90
1 mile run time (sec)**	308.5	22.45	249-331

* Injury time included.

** While the athletes prime event ranged from the 1/2 mile to the 15-mile run, all had run in a competitive mile.

TABLE 2. Psychological and Scholastic Data.

	Teenage Female Runners			Teenage Female Norms		
	$\bar{X}$	SD	Range	$\bar{X}$	SD	p**
Grade in School Completed	10.10	1.37	8-12			
Average in School*	89.80	3.99	85-95			
I-E (26)	9.25	5.55	1-19	13.02	5.32	<.025
CPI-Ai (13)	21.42	5.35	15-33	15.50	4.20	<.01

* 70-79, C; 80-89, B; 90-100, A
** Studentized t-test

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